

Remarks

Claims 41-58 are pending in the application. Claims 51-54 were rejected under 35 U.S.C. §112, second paragraph, as described in paragraph 4 of the Office Action. Claims 41, 44, 48 and 51 were rejected under 35 U.S.C. §103(a), as described in paragraph 6 of the Office Action. Claims 42, 43, 54-47, 49, 50 and 52-54 were rejected under 35 U.S.C. §103(a), as described in paragraph 7 of the Office Action. Claims 41, 44, 48 and 51 are the only independent claims.

In paragraph 4 of the Office Action, the Examiner indicates that it is not clear whether “a compressed packet” in line 7 of claim 51 refers to the same “a compressed packet” cited in line 5. Claim 51, as amended, now clearly requires the reception unit to be operable to continuously receive “compressed packets”, and the restoration unit to be operable to restore transmission data of “a compressed packet to be restored.” Therefore, Applicants respectfully request that the outstanding rejection of claims 51-54 under 35 U.S.C. §112, second paragraph, be withdrawn.

Applicants respectfully traverse the outstanding rejections of claims 41-54 for the following reasons.

The present invention deals with an apparatus and method for transmitting (or receiving) data in units of packets. A central aspect of the present invention is drawn to transmitting (or receiving) an uncompressed packet of data and then transmitting (or receiving) compressed packets of data. More importantly, in order to address problems associated with conventional data packet transmission schemes as discussed for example on page 1 through page 14 of the present application, in accordance with the present invention each compressed packet includes data that is based on transmission data of an uncompressed packet and transmission data of the packet to be compressed. These features are required in each of the independent claims, as discussed in detail below.

Independent claim 41 is drawn to a data transmission method for sequentially transmitting data in units of packets each containing transmission data from a transmitting end to a receiving end. Independent claim 41 requires:

transmitting an uncompressed packet in which predetermined transmission data is stored as uncompressed data at regular intervals; **subsequently continuously transmitting compressed packets** in which at least a portion of transmission data following the predetermined transmission data is compressed and stored as compressed data; and **forming compressed data** that is to be stored in any packet other than an uncompressed packet, **based on transmission data of the uncompressed packet and transmission data of a packet to be compressed**.

Claim 44 is drawn to a data reception method for receiving data in units of packets each containing transmission data from a transmitting end to a receiving end. The method of claim 44 comprises:

storing predetermined transmission data as **an uncompressed data packet** at regular intervals; **subsequently continuously receiving compressed packets** in which at least a portion of transmission data following the predetermined transmission data is compressed and stored as compressed data; and **restoring transmission data** of a compressed packet to be restored, **based on transmission data of the uncompressed packet**.

Claim 48 is drawn to a data transmission apparatus for sequentially transmitting data in units of packets each containing transmission data from a transmitting end to a receiving end. The apparatus of claim 48 is required to comprise:

a transmission unit operable to **transmit an uncompressed packet** in which predetermined transmission data is stored as uncompressed data at regular intervals, and **then to continuously transmit a compressed packet** in which at least a portion of transmission data following the predetermined transmission data is compressed and stored as compressed data; and a compression/uncompression section operable to **perform a compression process of forming compressed data** that is to be stored in any packet other than uncompressed packet, **based on transmission data of the uncompressed packet and transmission data of the packet to be compressed**.

Claim 51 is drawn to a data reception apparatus for receiving data that are transmitted in packet units from a transmitting end. The apparatus of claim 51 is required to comprise:

a reception unit operable to receive an uncompressed packet in which predetermined transmission data is stored as uncompressed data at regular intervals, and then to continuously receive a compressed packet in which at least a portion of transmission data following the predetermined transmission data is compressed and stored as compressed data; and a restoration unit operable to restore transmission data of a compressed packet to be restored, based on transmission data of the uncompressed packet and compressed data included in the compressed packet to be restored.

It is respectfully submitted that the applied prior art, either singly or in combination, fails to teach or suggest the above-identified limitations.

Paragraph 6 of the Office Action asserts that each of independent claims 41, 44, 48 and 51 are unpatentable over Cugnini et al. (Cugnini) in view of Geiger. It is respectfully submitted that a combination of Cugnini and Geiger would fail to teach that which is required in each of independent claims 41, 44, 48 and 51, within the meaning of 35 U.S.C. § 103, for the following reasons.

Cugnini is directed to a completely different broadcasting scheme than that of the present invention. Cugnini is drawn to transmitting a single composition signal comprising a sum of a plurality of signals that include a difference signal and a compressed difference signal. On the contrary, the present invention is drawn to transmitting a non-compressed packet **and then** (or **“subsequently”**) transmitting compressed packets. This is discussed in more detail below.

Cugnini is drawn to a stereophonic broadcasting system. As illustrated in Fig. 2 of Cugnini, and discussed for example in column 4, lines 3-26, the transmitting terminal generates, from left (L) and right (R) stereophonic signals, a composite signal for transmission from transmitter 24. The composite signal comprises a **sum** of: a delayed monophonic sum signal M, which is $L + R$; a delayed modulated stereophonic difference signal S, which is $L - R$; a compressed difference signal S'; and a pilot signal. More specifically, adder 12 adds each of M, S, S' and the pilot signal to generate the single composite signal for transmission. Accordingly, Cugnini, in no way, teaches or even suggests transmitting an uncompressed data unit **and “then” or “subsequently”** transmitting compressed data

units. Rather, Cugnini, teaches **continuously transmitting a single signal** composed of a sum of at least an uncompressed signal and a compressed signal.

As further discussed in paragraph 6 of the Office Action, Geiger is relied upon for teaching a “method and apparatus for adaptively compressing (Fig. 5) and expanding (Fig. 6) radio packets in a data communication system.”

However, this teaching of Geiger clearly fails to obviate the above-discussed shortcomings of Cugnini, such that a combination of the teachings of Cugnini and Geiger would clearly not result in that which is required in the present independent claims. Therefore, as further discussed below, even if one of ordinary skill in the art were to modify the teachings of Cugnini in view of the teachings of Geiger, as suggested in the Office Action, the resultant modification would fail to teach or suggest that which is required in each of independent claims 41, 44, 48 and 51.

If a person of ordinary skill in the art at the time of the invention where somehow motivated to modify the teachings of Cugnini in view of the teaching of Gieger, the resultant modification would be a completely different communication scheme than that of the present invention. Specifically, there is no teaching in either reference that would suggest to one of skill in the art that a compressed signal (such as the difference signal S' of Cugnini), should be transmitted **after** an uncompressed signal (such as the difference signal S of Cugnini), as is required in the present invention. Therefore, the only arguable modification of the teachings of Cugnini in view of the teachings of Gieger would result in a transmission scheme that continuously transmits a single signal that is composed of a sum of signals, wherein the single signal is packetized and wherein each packet in the single signal is a segment of the sum of the signals. Clearly, such a communication scheme is distinct from that of the present invention that requires transmitting an uncompressed packet **and “then” or “subsequently”** transmitting compressed packets, wherein the compressed packets are based on transmission data of the uncompressed packet and transmission data of the packet to be compressed. Therefore, the combination of the teachings of Cugnini in view of Gieger would fail to teach that which is required each of the independent claims.

In light of the above discussion, it is abundantly clear that a combination of the teachings of Cugnini in view of Geiger fail to teach that which is required in each of independent claims 41, 44, 48 and 51 within the meaning of 35 U.S.C. § 103, and is respectfully requested that the outstanding rejections under 35 U.S.C. § 103 be withdrawn.

Furthermore, the differences between the present invention of claims 41, 44, 48 and 51 and the Cugnini and Geiger references is such that a person of ordinary skill in the art at the time of the invention would clearly not have been motivated to modify the Cugnini reference or to make any combination of the prior art of record in such a manner as to result in or otherwise render obvious the present invention as presented in the present independent claims 41, 44, 48 and 51. Therefore, each of the independent claims 41, 44, 48 and 51 are additionally patentable over the combination of Cugnini, Geiger and the admitted prior art within the meaning of 35 U.S.C. § 103.

Still further, because claims 42-32 and 55, 45-47 and 56, 49-50 and 57 and 52-54 and 58 are dependent upon claims 41, 44, 48 and 51, respectively, and therefore include all the limitations thereof, it is submitted that claims 42-32 and 55, 45-47 and 56, 49-50 and 57 and 52-54 and 58 are additionally patentable over the prior art of record within the meaning of 35 U.S.C. § 103.

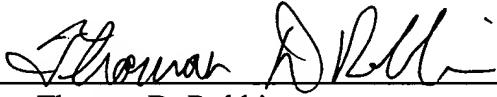
In view of the above remarks, Applicants respectfully submit that claims 51-58 would not have been obvious over prior art of record under 35 U.S.C. § 103(a).

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

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